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EXAMINER	
KRYLOVA, IRINA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Attachment to Advisory Action

1. Applicant's amendment filed on April 19, 2010 has been fully considered. The amendment is entered.

2. Regarding the rejection of claims 13-25 under 35 U.S.C. 103(a) as being unpatentable over **Mariotti et al** (IT 1,317,261) in view of **Nakagawa et al** (US 2004/0143061), as evidenced by **Kolarik** (Polymer, 47, 2006, 346-356), Applicant argues that a) **Nakagawa et al** relates to polyphenylene ether compositions and fails to mention medium molecular weight components and b) neither **Mariotti et al** nor **Nakagawa et al** disclose a ratio between high molecular weight components and medium molecular weight components and that of the claims, therefore the reliance on *in re Boesch* is incorrect.

3. Examiner disagrees.

1) **Mariotti et al** discloses a foamed thermoplastic elastomeric material comprising:

a) a mixture of 50 phr of high molecular weight styrene-butadiene-styrene block copolymer; and 50 phr of a medium molecular weight thermoplastic elastomer comprising styrene/ethylene/butylene/styrene or styrene-butadiene-styrene block copolymer (p. 4, lines 21-25; p. 5, lines 1-4);

b) 40-80 phr (Tables 2-3) of a polypropylene homopolymer comprising a commercially available isotactic crystalline polypropylene Moplen C30G (p. 5, lines 5-14) having the following characteristics (see **Kolarik**, Table 1):

a) Tm of 166.9°C;

b) MFI of 6 g/10 min (as to instant claims 18-19);

c) 50 phr of paraffin oil (as to instant claim 21);

d) endothermic foaming agents comprising a mixture of sodium bicarbonate and citric acid (as to instant claim 22); and azodicarbonamide blowing agent (p. 5, lines 20-24). Though **Mariotti et al** fails to specify the molecular weights, amounts of styrene blocks in the block copolymer, however, since **Mariotti et al** discloses the use of commercially available crystalline polypropylene polymers available under the trade name of Moplen, and high molecular weight and medium molecular weight block copolymers commercially available under the trend name of Kraton, and the instant invention discloses the use of the commercially available products of the same brand, i.e. block copolymers of brand name KRATON and polypropylene of brand name MOPLEN (see Table 1 of the instant invention), therefore, it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to substitute the block copolymers Kraton G 1651 and Kraton G 1650 of **Mariotti et al** for analogous block copolymers Kraton MD 6933ES and Kraton G 1657; and Moplen C30G polypropylene polymer of **Mariotti et al** for analogous Moplen HP1078 or Moplen HP502L. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. Sinclair & Carroll Co vs. Interchemical Corp., 325 US 327, 65 USPQ 297 (1045). Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of

one equivalent for another is not patentable. See In re Ruff 118 USPQ 343 (CCPA 1958). Otherwise, Applicant is required to provide evidence of why such substitution is not applicable.

2) Furthermore, **Nakagawa et al** discloses a thermoplastic resin composition comprising:

A) a low molecular weight hydrogenated block copolymer ABA having a number average molecular weight of less than 120,000;

B) of a high molecular weight hydrogenated block copolymer ABA, having a number average molecular weight of 120,000 or more, preferably 170,000-300,000 ([0081], [0092]); wherein the ratio between block copolymer A) and block copolymer B) is 95/5 to 5/95 ([0084]);

C) a polyphenylene ether ([0015]);

D) a paraffin oil ([0099]).

The block A comprises styrene, block B comprises butadiene ([0073]-[0075]).

The content of polystyrene block in the high molecular weight block copolymer comprises 20-55% ([0092]). The number average molecular weight of the styrene polymer block in the low molecular weight copolymer is 20,000 ([0085]).

Since the ratio between block copolymer A) and block copolymer B) is 95/5 to 5/95 ([0084]); therefore, it would have been obvious to a skilled artisan that that ratio is very broad and it will obviously overlap with the ratio of the block copolymers as claimed in the instant invention (100/(5-50)). Thus, the reliance on *in re Boesch* is applicable.

Further, since the physical properties of the composition, including tensile strength, depend on relative proportion of LMW block copolymer and HMW block copolymer, such limitation as relative proportion of the LMW block copolymer and HMW block copolymer becomes a result effective variable, therefore, it would have been obvious to one skilled in the art at the time of the invention was made, to make variations in the content of LMW block copolymer and HMW block copolymer within the ratio 95/5 to 5/95, as cited by **Nakagawa et al,** to obtain the desired combination of physical properties, including tensile strength and surface appearance. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (MPEP 2144.05 II).

Further, **Nakagawa et al** teaches that when only low molecular weight block copolymer or only high molecular weight block copolymer are used, excellent surface appearance, high impact strength and decrease in generation of foreign matter at the time of production, cannot be attained ([0082]). Though the composition of **Nakagawa et al** discloses polyphenylene ether, however, **Nakagawa et al** relates to thermoplastic resin compositions (Abstract), and both polypropylene and polyphenylene ether are thermoplastic resins. **Nakagawa et al** further teaches that it has been found that a thermoplastic resin composition characterized by having an excellent appearance, retaining its impact strength, and having less foreign matter generation at the time of production, can be obtained by using more than one block copolymer having different molecular weight at the same time ([0012]). Therefore, it would have been obvious to a skilled artisan to conclude that addition of two block copolymers having different molecular weights to thermoplastic polymers other than polyphenylene ether, including

polypropylene, would lead to producing compositions having similar advantageous properties. Thus, based on teachings of **Nakagawa et al** one of ordinary skill in the art would have been motivated to apply the teachings of **Nakagawa et al** to the composition of **Mariotti et al** and thus arrive at the present invention.

3) Though **Nakagawa et al** discloses the hydrogenated block copolymer ABA, having a number average molecular weight of 120,000 or more, preferably 170,000-300,000 ([0081] as being high molecular weight rather than medium molecular weight, however, the molecular weight of the block copolymer B) of **Nakagawa et al** is overlapping with the molecular weight of the component (a) as claimed in the instant invention. Furthermore, it would have been obvious to a skilled artisan that a polymer having molecular weight in the range of 120,000-300,000 may be called medium or high molecular weight polymer.

4. Regarding the rejections of claims 13-25 under 35 U.S.C. 103(a) as being unpatentable over **Himes et al** (US 4,880,878) in view of **Leicht** (US 4,764,535) and **Mariotti et al** (IT 1,317,261); **Himes et al** (US 4,880,878) in view of **Burnell** (US 5,272,182) and **Mariotti et al** (IT 1,317,261); and claim 26 under 35 U.S.C. 103(a) as being unpatentable over **Burnell** (US 5,272,182) in view of **Himes et al** (US 4,880,878), Applicant argues that combination of **Himes et al** with **Leicht** and **Mariotti et al** or **Himes et al** with **Burnell** and **Mariotti et al** would destroy **Himes'** oil absorption resistance.

5. Examiner disagrees.

1) Himes et al discloses a thermoplastic blend comprising two block copolymers of the formula ABA, wherein the block A comprises a styrene polymer and block B comprises a butadiene polymer; a polypropylene, and a paraffinic oil, wherein the composition comprises not only oil absorption resistance, but improved tensile strength as well (col. 2, lines 64-68). Though **Himes et al** does not specify the composition as being a foamable, and therefore, does not specify the composition further comprising a nucleating agent and a blowing agent; however, since a) **Himes et al** discloses a thermoplastic composition having improved tensile strength; b) addition of blowing agent to thermoplastic composition will make it foamable; c) **Mariotti et al** discloses a foamable composition also comprising a mixture of LMW and HMW block copolymers; further blended with polypropylene, similar to the composition of **Himes et al,** but further comprising a blowing agent to produce a foam, therefore, it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to combine teachings of **Himes et al** and **Mariotti et al** to arrive at a thermoplastic composition that has a good impact strength but also being foamable, so to produce foamed articles having improved tensile strength.

2) Furthermore, making composition of **Himes et al** foamable by addition of blowing agents does not necessarily mean decrease in oil resistance. Foamed articles having high oil resistance are known in the art (see US 2002/0077425, which is applied as evidence reference only).

3) Regarding the Applicant's argument that **Himes et al** does not disclose foam compositions, **Burnell** (US 5,272,182) and **Himes et al** (US 4,880,878) are not analogous art and thus are not combinable, however, **Burnell** discloses a preblend comprising a styrene-diene-styrene triblock copolymer having a molecular weight in the range of 100,000-350,000 and a hydrocarbon extending oil, to be used in a blowing agent concentrate. The concentrate comprises the preblend and further a blowing agent (Abstract), and is utilized to prepare foamable materials (Abstract). Therefore, preblend is not a foam composition per se, but just a combination of ingredients for further making the foam. **Himes et al** discloses a similar composition comprising a blend of commercially available block copolymer Kraton G 1657 (which is a styrene-diene-styrene block copolymer as well) with paraffinic oil (see Table 3), i.e. appears to be a preblend of the same ingredients as the preblend of **Burnel.** Though the uses of the preblend as cited in **Burnell** and **Himes et al** are different, nevertheless, the compositions of the preblends of **Burnell** and **Himes et al** are identical and thus appear to be analogous art. In addition, though **Himes et al** does not specify the composition being used for making foams, however, **Himes et al** is a secondary reference. Secondary reference does not need to teach all limitations. "It is not necessary to be able to bodily incorporate the secondary reference into the primary reference in order to make the combination." *In re Nievelt*, 179 USPQ 224 (CCPA 1973).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina Krylova whose telephone number is (571)270-7349. The examiner can normally be reached on Monday-Friday 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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